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## UNITED STATES DEPARTMENT OF AGRICULTURE BUREAU OF BIOLOGICAL SURVEY WASHINGTON, D. C.

## BIRD ENEMIES OF NOXIOUS RODENTS IN TEXAS.

In combatting such noxious rodents as the mice, ground squirrels, and pocket-gophers found in Texas, it is well to remember that these animals have important natural enemies, prominent among which are several species of birds. Among hawks and owls, two or three of the smaller, swift-flying hawks are injurious, and at times the great horned owl is destructive, but the other hawks and the owls are, with occasional individual exceptions, beneficial in their feeding habits. These should be protected in order that they may render the maximum of aid.

At present several species of ground squirrels are doing considerable damage in Texas. Nearly all the larger hawks known collectively as "chicken hawks" feed upon these rodents and destroy large numbers. Swainson's hawk, a large, sluggish, slow-flying species, and the long-tailed, white-rumped marsh hawk are most efficient in this work, but many ground squirrels are eaten also by the ferruginous rough-leg, the red-tail, and Harris's hawk. Even the little sparrow hawk attacks the thirteen-striped ground squirrel. The rough-legged hawk in some localities bears the name of "squirrel hawk" in recognition of its habit of feeding on ground squirrels. In eating these rodents the hawks often tear them open, swallow the flesh and soft parts, and discard the skin turned neatly inside out.

The larger hawks sometimes prey on prairie-dogs, but these little animals are adept at escaping from winged enemies and usually elude capture. The ferruginous rough-leg perhaps secures more of them than do any of the other species.

Pocket gophers, though usually considered safe from attack in their burrows, often fall a prey to birds. The barn owl especially secures many, as does the great horned owl. Even in daylight the redtailed and Swainson's hawks capture these animals as they thrust dirt up from their underground runs. Another bird that secures numbers of them is the great blue heron. Standing patiently in the fields it waits for a pocket gopher to approach the surface. With one quick blow of the heron's bill, the animal is stunned and then is swallowed entire.

Practically all hawks and owls feed upon the various rats and mice common throughout Texas. The short-tailed meadow mice are especial favorites with the long and short-eared owis, the barn owl, and the marsh, Swainson's, and the red-tailed hawks. In fact they furnish a large part of the food of these birds. House mice and gray rats are eaten by practically all nawks and owls found in the State. White-footed mice and packrats are frequent victims of these same birds. The cotton rat is common prey of the short-eared owl and red-tailed hawk. Pocket mice and kangaroo rats are eaten by most owls.



It is thus easily seen that hawks and owls, which unfortunately are popularly considered a fair target for any gunner, should in most cases be strictly protected. The value of one of them may be judged from the fact that in 592 pellets of the barn owl the following mammals were identified:

261 Pocket gophers.

50 Harvest mice.

74 Short-tailed meadow mice.

230 Kangaroo rats.

184 Pocket mice.

215 House mice.

144 White-footed mice.

Other miscellaneous mammals were present in smaller numbers.

Individual hawks or owls which prey regularly upon poultry may be destroyed but these should be singled out. The misdeeds of a few should not result in organized war on the whole tribe. In the long run hawks have a large credit balance of good accomplished in the destruction of harmful rodents.

Texas, as the largest State in the Union, probably has within its borders the greatest variety in bird life, and it must not be supposed that the beneficial birds are limited to those that prey upon noxious mammals. The scissor-tailed and other flycatchers, the swallows, many species of warblers, and the titmice are efficient enemies of a large array of injurious insects. Of more than sixty species of birds known at present to feed upon the cotton boll weevil, all are found at some season within the confines of the State of Texas. Among the birds that are most destructive to this insect may be mentioned the painted bunting, the barn and cliff swallows, the orchard and Bullock's orioles, and the meadowlark. A host of other birds do good in various ways, and with few exceptions should be encouraged to make their homes on range and ranch lands.

